

Dear Reader,

You will by now have received three issues of the Madras Snake Park News letter. We hope that you have found it purposeful and interesting, and that you would like to continue receiving it.

On our part, we began its publication with the hope that we could provide it free of charge. Unfortunately the high costs of paper and printing, coupled with the fact that the Madras Snake Park is a non-profit organization, now makes this impossible. At the same time the response to our first two issues has made it clear that such a magazine fulfils a long felt need. We are therefore initiating a system of subscriptions as follows:

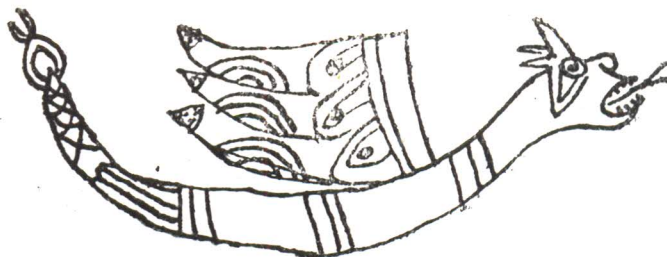
Local	Rs.	10 annually
Foreign	£	2 or equivalent annually (surface)
	£	4 or equivalent annually (air)

Cheques should be made out to the Madras Snake Park Trust

For this year no subscription will be charged and the above rates apply from 1978 on. Subscription will be treated on a January to December basis and there will be three issues a year in January, May and September respectively.

We would be very grateful for your continued support, and have promised ourselves to justify it by a consistent effort to improve the quality of the Newsletter.

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CENTRE FOR HERPETOLOGY
MADRAS SNAKE PARK
POST BAG NO. 1
CHENNAI 600 029
INDIA

NEWS FROM THE MADRAS SNAKE PARK
and MADRAS CROCODILE BANK

The Central Marine Fisheries Research Institute in Madras is associated with the snake park's Ridley's sea turtle (Lepidochelys olivacea) hatchery this year. C M F R I paid for the 125 nests bought from commercial collectors for transplanting in the hatchery. Almost 9000 hatchlings were released, for an average hatching percentage of 62. We are grateful to the C M F R I and to Joan and Janine Delouche who once again converted their garden into a turtle hatchery.

Werner Fend, the Austrian photographer well known for his films and books on Indian wildlife, spent a month at the Snake Park filming snakes and snake catching by the Irula tribals for a forthcoming film.

This year again the Snake Park participated in the Tamil Nadu Tourist Trade Fair, which was inaugurated on 2 January. The exhibit is a great improvement on last years' and includes an extensive photo display. The T N T D C financed the exhibit.

The British High Commission in Madras has loaned us an air conditioner which we use to keep hill species such as pit vipers alive. We are very grateful for this and for the interest that the High Commission has had in the Snake Park.

The Government of Tripura invited the Director to visit the State and advise on a small snake park which the Forest Department will operate near Agartala. The last week of January was spent in touring the site and other parts of Tripura. Some time was also spent with the snake eating chakma tribals in the north.

Over 100 mugger were transferred from the Crocodile Bank to the Tamil Nadu Forest Department (hatchlings resulting from the '76 egg collection). The Crocodile Bank now feels it is self sufficient with 94 mugger, 3 of which are breeding females.

The Tamil Nadu Tourist Development Corporation which has at all times given us assistance and encouragement is providing a grant of Rs.50,000 for the development of the Madras Crocodile Bank Trust. The first half of the grant was received in March.

Since the forest departments of several states are launching crocodilian projects, the Crocodile Bank Scheduled a seminar on egg collection on 14 February. The agenda included talks on crocodiles in Tamil Nadu, crocodile egg collection techniques, early care of hatchlings and demonstrations of egg collecting and handling of sub-adult crocodiles. The number of participants was one. A subsequent seminar was held at the Sainik School at Amaravathi Dam and about 40 members of the Forest Department participated, with Mr. T Jayadev, C C F and Mr P. Padmanabhan, Wildlife Warden, presiding.

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The Madras Crocodile Bank, which was inaugurated by Mr. P.K.Dave on December 5, now receives a thousand visitors every week. With the able help of S. Bhaskar our field officer and Allen Vaughan, Manager, we hope to eventually add a shell museum and sea snake exhibits to the Bank.

LETTERS TO THE SNAKE PARK

(S. Munisundaram's letter gives an idea of how unfortunately widespread and deep rooted are superstitious myths and beliefs about snakes).

Dear Sir:

I seek your opinion in connection with the following incident. My son aged 14 years, hit a cobra with a stick. It went away smoothly into its abode without making any gestures (like raising its hood or making any hissing sound). This happened three days ago. He is told by his friends and others that the snake will revenge itself. There is since a change in him and I feel that these fictitious stories have had a psychological effect on him. I want to know from you whether cobras are capable of taking revenge. Besides I want to know as a parent if any remedial measures have to be taken as a precaution.

Yours sincerely,

(S. Munisundaram)

ECHIS CARINATUS IN THE RAMN OF KUTCH

During a visit to the Ramn of Kutch in the early '60's with Dr Salim Ali and the Bombay Natural History Society bird ringing camp, one of our problems was the large number of saw-scaled vipers in the area. Their dull colour makes it almost impossible to see them and this is what results in the large number of bites among army personnel and others who camp in the area. When we arrived in camp and learnt about this prevailing danger, we opened the Haffkine Institute instruction booklet on antivenom injections. The instructions were so alarming and we were so inexperienced in handling this kind of syringe that we decided to be extra careful and not get bitten. A member of our party who was expert in catching snakes caught several Echis with lightning moves, pinning them by the neck. The hissing sound of the snake (produced by rubbing its saw-edged lateral scales and inflating its body for resonance and amplification) is also quite intimidating.

Zafar Futehally, Doddagubbi Post, Via Vidyanagar, Bangalore
56 21 34. (3)

NEWS FROM BURMA

Snakebite Seminar

U Tun Yin writes that Dr Maung Maung Aye read a paper on snakebite during the twenty-fourth Burma Medical Conference in January. Over 9000 persons are bitten by snakes in the Socialist Republic of the Union of Burma annually and an estimated 850 of these bites are fatal. 85% of the victims are cultivators, the majority of whom are bitten on the leg during the paddy reaping season. Most bites occur in the following divisions: Mandalay, Sagaing, Magur, Pegu, Irrawaddy and Rangoon.

(The official snakebite figures and the actual ones may differ greatly. For example, the Govt. of India statistics for snakebite deaths in '69 was 1108. These cover deaths in government hospitals only. The actual number (Sawai, 1971) was approximately ten times that; this includes deaths in private hospitals. The same may apply for Burma- Ed).

Myothit Abounds With Snakes

Myothit, 5 Feb- Sixty-nine farmers were bitten by vipers in Myothit Township in Magwe Division during 1976, but only 5 lost their lives. The rest survived after treatment at the hospital.

In 1975, there were 46 victims of snakebite, of whom 43 survived.

In 1974, seven died out of 57 bitten by vipers. In all the cases where the victim of snakebite reached the hospital in time, life was saved.

When treatment with indigenous medicines was first given and the victims brought to the hospital only when it failed, the victims generally passed away- The Working People's Daily, Monday, 14 Feb '77.

Ecological Island

In 1933 Mr Kaulback journeyed through Assam and Eastern Tibet with Knigdon-Ward.... In 1935, accompanied by John Hanbury-Tracy, (he spent) eighteen months there in an attempt to discover the source of Salween River. In 1938-39 he spent eighteen months in Tamai Valley with base at Pangnandin, collecting reptilia for the British Museum....

(Extract from a letter to me from R J H Kaulback):

"It might, however, be of help to some future collector to tell you that there is a most remarkable ecological "island" extending some ten miles up the Tamai Valley from Pangnandin and perhaps four miles below. I am quite unable to understand the reasons for its existence, but in this small area (where I spent the entire monsoon on 1938) I collected a large series of an entirely new snake (Trimeresurus), five new lizards and three new frogs, none of which I came across anywhere else, not even a mile outside the limits of the "island". The Tamai Valley incidentally is very rich in flying squirrels both chinchilla-grey and red."- Tun Yin, The Guardian, Friday, November 7, 1975.

Post Box 8927
 Malir City P O
 Karachi 22

February 2, 1977.

....There is also a pair ..of adult gharial at the Karachi Zoo. It is believed that they have been in the collection for at least twenty years. Unfortunately in their enclosure there are no suitable earthen banks for the female to excavate a nest hole. A survey carried out in 1975 on the lower stretches of the Indus River in Sind Province turned up no evidence that gharial still survived in any of the former haunts but there may still be a remnant population on the Ravi River adjacent to the border of India.

Green turtles and Pacific Ridley's continue to use their traditional nesting sites around Karachi beaches and from all available evidence of fresh tracks and fresh dug nests egg laying females are more numerous than available beach areas with earlier egg clutches often being partly excavated or disturbed by subsequent nesting females which in turn encourages predatory dogs. Trade in the export of turtle leather, taken from the fore-flippers only of nesting green turtles was reported last summer from a remote part of the Makran coastal region, the skins being purchased by Japan....The Sind Provincial Government Wildlife Management Board succeeded in locating the source of this illegal trade and successfully prosecuting the perpetrators.

Turning to your newsletter, we are particularly interested in the published checklist of snakes of Jammu and Kashmir but would venture to suggest that inclusion of the reference by Das et al (1964) of such an exclusively neotropical genus as Micrurus should have been accompanied by some editorial comment. This newsletter can make a more valuable contribution in an understanding of herpetology as well as such subjects as zoogeography if editorial prerogatives are used to make critical comments on contributions, where it seems desirable.

The Himalayan Pit Viper Agkistrodon (Ankistrodon in your newsletter) was collected in July '75 by my colleague Dr. S R Telford from Naran at an elevation of 7,900 ft. This record will be published in due course as eight specimens in all were collected including gravid females which subsequently produced young. I think this is the first authentic record for the Pakistan part of the Himalayas.

(In another letter dated 21 February Mr. Roberts writes): Dr. Telford and myself went out the other day in a fishing boat to collect sea snakes and we found that the Boaked Sea Snake (Enhydrina schistosa) is apparently mating at this particular season as we encountered no less than four pairs "in copulo". Two other species encountered were solitary swimming individuals who rapidly took evasive action from the boat. The snakes had a light infestation of leeches.

MUGGER PIR

These extracts about the famous Mugger Pir of Karachi, which exists even today, are from Andrew Leith Adam's "Wanderings of a Naturalist in India", 1867.

The Crocodile-pond or "Mugger-pir" as it is called, lies to the north-west of Kurrachee....

Young ones from a foot in length and upwards, ran nimbly along the margin of the pond, disappearing suddenly in the turbid waters as soon as we approached. The largest crocodile lives in a narrow tank separate from the others. The Fakirs, and natives who worship in the neighbouring temples, have painted his forehead red-they venerate the old monster, making a salaam to his majesty whenever he shows himself above water. A handsome young Beloochee, whose occupation it was to feed the animals, informed us that the said king was upwards of two hundred years old! (?) and that, by way of a 'tit-bit' he was in the habit of devouring the young crocodiles. During our visit this enormous brute was asleep on the banks of his dwelling place and seemed quite indifferent to our presence, although we came within a foot of him, and even attempted to arouse him by rubbing his nose with a leg of goat's flesh, which, however, a young one greedily seized and dived under water. Our attendant tried in vain to excite their ferocity, but beyond a feeble attempt to snap their trenchant teeth, the animals showed no disposition to attack us.

I visited the crocodiles (Crocodilus palustris) on two occasions at an interval of several years, and although during that time they had been seen by hundreds of Europeans, including a certain class of mischievous young Englishmen (whose chief amusement, we were told, had been to shy stones and sticks down the throats of the gaping monsters as they lay basking on the banks of the pond), yet there seemed no diminution in their numbers, and the wild and unearthly interest of the scene was to us as great as ever.

The greater pond is about 300 yards in circumference, and contains many little grassy islands, on which the majority of the crocodiles were then basking; some were asleep on its slimy sides, others half submerged in the muddy water, while now and then a huge monster would raise itself....

The crocodiles dig deep in the sand, under the neighbouring date trees, and there deposit their eggs. Quantities of deciduous teeth, of various sizes, were strewn along the slimy edges of the pond.

....the crocodiles themselves seem to anticipate a feast, and on the arrival of a party come out in unusual numbers. Accordingly, we had a goat slaughtered; during which operation the brutes seemed to rouse themselves, as if preparing for a rush. Then our guide, taking piece after piece of the flesh, dashed it on the bank, uttering a low growling sound, at which the whole tank became in motion, and crocodiles, of whose existence we had been before ignorant, splashed through the shallow water, struggling which would seize the prize. The shore was literally covered with scaly monsters, snapping their jaws at one another.

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Our young Belooch friend informed us that they generally swallow their food at once, and do not, as has been asserted, bury it until it becomes putrid; also that other large individuals besides the old king frequently devour the young soon after they are hatched. Crocodiles wallowing in the mud of the Nile, or gavials in the Indus, are sights which one is prepared to encounter; but the traveller may wander far before he meets with a scene so strange and unexpected as that just described.

COLLECTING FOR THE CALCUTTA REPTILE MARKET ('67-'70)

About 90% of the live reptile ~~market~~ export from India has been from the port of Calcutta and the majority of these reptiles were caught locally in West Bengal. At present the export is banned (since '72) but when several thousand reptiles were being exported every month there were a considerable number of "shapuriyas" (snake charmer/catcher) and other groups who supplied live snakes to dealers for a living.

In this way many traditional snake charmers who had previously earned their livelihood by exhibiting sick, defanged cobras to the music of a gourd pipe and damboora or "charming" snakes away from gardens and compounds (catching the snakes they brought along!) gave up these not so lucrative professions and supplied live reptiles to the export houses. Until the commerce in live reptiles gained momentum they had a number of other "occupations" based on tricking the ignorant, like selling snake-jewels which were implanted on the heads of cobras with plaster, selling reptile bones as purported cures for rheumatism and so on, but the growing demand for live snakes in recent years had almost put an end to these professions.

Since 1967 I have had a sort of supply agency for live reptiles and have worked closely with the shapuriyas. In the beginning, being naive and enthusiastic, I would advance them large sums of money and send them out to collect snakes. They would return penniless, with hangovers and no snakes. Later I would participate in the collections. To give an idea of numbers caught: In '67, nine others and I caught 131 Russells Vipers (Vipera russelli) in January and February in the Burdwan District; the majority of these were less than two feet long. The trip also produced 45 monocellate cobras (Naja kaouthia) and 33 rat snakes (Ptyas mucosus). In the same year an additional 211 Russells Vipers were caught in other locations in West Bengal.

There can be no doubt that there was tremendous pressure on venomous species before the export ban. I estimate that in '67 the total number of binocellate (Naja naja naja) and monocellate cobras captured in West Bengal could have exceeded 2,500. Common kraits (Bungarus caeruleus) are rare in West Bengal and in no year did collection exceed 100. Banded kraits were caught for export and the maximum demand never exceeded 150-200 a year.

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I think the maximum collection occurred between '67 and '70. Our winter collection figures for Russells Vipers during this time were 675 and at other times about 300. We also procured in this period 165 ornamental snakes (Chrysopelca ornata). Several thousand vine snakes (Ahaetulla nasutus) and bronzeback tree snakes (Dendrelaphis tristis) were brought in each year. The lowest figures were for cat snakes (Boiga) and wolf snakes (Lycodon) which did not exceed 50 specimens annually. Checkered keelbacks (Xenochrophis piscator) and Enhydris were brought to me in bucketfuls.

At least 93 pythons (Python molurus) turned up in Calcutta markets in '68 alone, 35 of them from Assam, 21 from U.P. and 37 from West Bengal. Also in this year 27 king cobras (Ophiophagus hannah) from Orissa changed hands in Calcutta.

In '69 the trade suffered a set-back and snake prices rocketed. For example, dealers had to pay as much as Rs. 20 for a cobra which had previously cost Rs. 6 or 7.

With the legislation of the Wildlife (Protection) Act, most dealers left the market and this affected large numbers of catchers. Snake supply decreased and I found I had to catch most of the snakes I needed for my snake park and venom extraction needs.

The table below gives collection figures for venomous species for the period 1973 to 1975.

YR.	CATCH- ERS	NAJA NAJA		N.KAO- UTHIA		O.HANNAH		V.RUSSE* LLI		B.CAERU- LEUS		B.FASCI- ATUS	
		M	F	M	F	M	F	M	F	M	F	M	F
'73	39	15	28	61	111	1	2	65	183	7	17	9	29
'74	27	21	39	83	187	X	X	51	121	5	9	11	23
'75	41	7	19	71	259	1	X	41	185	7	19	17	31

Dipak Mitra
31 Hindustan Park
Calcutta 29

NOOSING AGAMA TUBERCULATA

While studying the life history of Agama tuberculata in the Dohra Dun-Mussoorie, U.P. area, I found it necessary to live-capture individuals in order to obtain growth records as well as to mark lizards with daubs of paint for the purpose of making accurate observations of the movements of specific individuals. A. tuberculata is a moderately large (adult male snout-vent to 13 cms and total mass to 90 gms), diurnal species. Its territorial behaviour and method of foraging from a look-out point enable an investigator to learn much about the lizard. However, capturing individuals is difficult since the animals disappear into a crevice if approached too closely (usually within 1.5-3m). The use of a noose allowed me to readily capture juvenile, subadult and adult lizards. Hatchlings are usually too wary.

The noose was mounted at the tip of a 3-4 m length of hill bamboo (ringal or Arundinaria falcata). The tip of the pole was very slender, about 3 mm in diameter. The butt of the pole was 15 mm in diameter. The loop was made of heavy waxed thread (from a local show repairman) which would hold the loop open. The loop was pulled closed by a lighter fishing line which ran down the length of the pole to its base. Guides made of adhesive tape wrapped around the pole and string held the string in position and were adjusted to provide sufficient friction so that the loop would not be easily pulled open by a struggling lizard. A layer of paper between the string and adhesive tape prevented the tape from sticking to the string. The pole was designed to collapse into two sections to facilitate transport to and from the study areas. To use the pole I would overlap the sections approximately 15 cms and bind them together with a shoe lace.

To use the noose, I would first pull sufficient string out at the tip to fashion a loop approximately 5x8 cms. After approaching the lizard to within reaching range, I would slowly extend the pole and position the loop over the lizard's head. Several attempts may have been necessary, especially if the lizard was somewhat skittish or if the wind was blowing. Once the loop was in position, the string was pulled to tighten the loop—care and practice was needed to avoid injuring the lizard. As the captured lizard would immediately start to struggle violently, I found it necessary to quickly pin the pole to the ground with my hands or feet and then, keeping the pole pinned to the ground, move towards the lizard to grab it with one hand and loosen the noose with the other hand. Prior to being caught a lizard was usually quite passive about the whole affair until the noose suddenly tightened around its neck, when it felt like a large mahseer was at the end of a lightweight spin fishing rod!

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SNAKE COLLECTING IN MATHERAN

The hill station Matheran is 2460 ft above sea level and lies 30 miles east of Bombay. The following random notes are from personal observation.

1. Cobra (Naja naja naja): Cobras sometimes eject drops of venom for a short distance ($1/2$ mts). I have seen them feed on common wolf snakes (Lycodon aulicus) and rat snakes (Ptyas mucosus).
2. Common Krait (Bungarus caeruleus): Very common. Sometimes dark brown with the usual white bands. Kraits feed largely on burrowing snakes and occasional mice. Gharpurey (Snakes of India and Pakistan) writes that kraits move in pairs; I have seen them only singly.
3. Russells Viper (Viper~~a~~ russelli): Some will occasionally squirt venom for about a foot when provoked.* Uncommon in Matheran.
4. Green Pit Viper (Trimerosurus gramineus): Generally found in small bushes and usually sluggish. Feeds on mice, lizards and birds. One female (106 cms) which I captured gave birth to 6 young (average length 12 cms) shortly thereafter. I have had several green pit viper bites; the bitten area becomes swollen, discoloured and painful and the effects last for two days.
5. Vine Snake (Ahaetulla nasutus): Common.
6. Bronzeback Tree Snake (Dendrolaphis tristis): Common.
7. Ceylon Cat Snake (Boiga ceylonensis).
8. Forsten's Cat Snake (Boiga forstenii): Feeds mainly on lizards, catching an occasional bird or mouse. May grow to 6 ft. Strikes and bites fiercely when frightened, hissing when disturbed.
9. Indian Rock Python (Python molurus): Active in the rains. The largest one seen was a little more than 14 ft.
10. Common Wolf Snake (Lycodon aulicus).
11. Yellow-spotted Wolf Snake (Lycodon flavomaculatus).
12. Travancore Wolf Snake (Lycodon travancoricus).
13. Checkered Keelback Watersnake (Xenochrophis piscator).
14. Green Keelback (Macropisthedon plumbicolor).
15. Striped Keelback (Amphiesma stolatus).
16. Trinket Snake (Elaphe helena).

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* Dipak Mitra of Calcutta also reports this habit in the Russells Vipers of West Bengal. In Madras we have not observed it- Ed.

17. Lesser Striped-neck Snake (Liopeltis calamaria).
18. Banded Kukri Snake (Oligodon arnensis).
19. Rat Snake (Ptyas mucosus).
20. Common Sand Boa (Eryx conicus).
21. Shield-tail Snake (Uropeltis macrolepis).
22. Common Worm Snake (Typhlops braminus).
23. Beddome's Worm Snake (Typhlops beddomei).

Neelinkumar Khaire
"Usant"
Pune- Satara Road
Near Bhupkar Petrol Pump
Poona- 411 009

INTRODUCING THE IRULAS

Thrice a week, Chockalingam works in the demonstration area of the Madras Snake Park. In his spare time he often wanders in the adjoining Guindy National Park, identifying snakebite medicinal plants. He believes firmly that antivenom serum is not the only cure for snakebite. It may be mentioned here that Ionides always received herbal treatment for his numerous venomous bites from medicine men in Africa.

Chockalingam has had ten cobra bites and has never received antivenom serum. His most serious bite occurred some years back while he was pinning a cobra in its hole. The snake inflicted a severe two fang bite on Chockalingam's thumb. Minutes after the bite, feeling giddy, Chockalingam prepared and ate the first dose of the herbal mixture "Voley Yerege". He was normal after four doses. (In none of the ten cobra bites was there an onset of paralysis).

Chockalingam's ten year old son was bitten by a Saw-scaled Viper (Echis carinatus) last year. He had some "Voley Yerege" but there was no anxiety as his father had put him through a six-month "immunity course" against Echis venom when he was a child. During these six months he was given some "Voley Yerege" once a month, on the day preceeding the darkest night. Most herbal treatments which Irulas use last for six days- if prolonged, there could be a negative effect.

In February this year a small boy was bitten by Echis and received antivenom treatment at the General Hospital, Madras. On being discharged eight days later however, the bitten arm was still swollen and painful. His family brought him to Chockalingam and after a four day course of herbs the swelling subsided.

We would be happy to send some of these herbal mixtures for laboratory testing.

RARE DWARF CROCODILE BREEDS IN CAPTIVITY

Hatching of Osteolemus tetraspis in Zoo Negara, Malaysia on 29.8.1976.
(Report received from Isher Singh, Chief Adviser, Zoo Negara)

The female dwarf crocodile, which was in an enclosure 40ft x 20ft with two male dwarf crocodiles, was seen making a nest in early June 1976 in a thick shrub of guinea grass. She was seen collecting dry grass for the nest.

When the nest was ready in the shrub, examination was made by Mr K J Sims with the zoo Head Overseer Abdul Rahman by going as close as possible. The nest appeared to be 8" below ground level and had several layers of grass mixed with sand. It was decided to leave the female dwarf crocodile alone. It was constantly noted that the female lay on the nest and appeared ferocious when anyone appeared near.

On 29 August 1976....it was observed that the nest was open and there were six eggs in it. At 11 a.m. the first crocodile (hatched). (Later) it was found that the mother was in the pool with one newly hatched crocodile....the two big male crocodiles were separated by a barrier.

(The third egg hatched at 12.35, the fourth at 12.10 and the fifth at 2.30 p.m.). Later when nothing happened to the sixth egg, it was examined and found to be infertile.

The water in the pool was then reduced to 4" in depth and palm tree leaves were placed on the top of the enclosure to reduce the heat and to keep the water in the pool cool. Arrangements were made to catch grass-hoppers and dragon-flies.

On 10th September 1976 one was found dead and....the cause of death was given as "yoke sac unabsorbed".

They are still being fed with grass-hoppers, dragon-flies and the mother gives them small chips of meat out of her meat ration.

J N Laitinen writes, "8 Osteolemus were hatched last December at the Overton Park Zoo, Memphis, Tenn., U S A.

GHARIAL RELEASED

In a ceremony on 9th April '77 the Orissa Forest Department released three gharial from the first batch of two year old captive hatched and reared ones into the scenic Satkoshia Gorge, Mahanadi River. The gharial rehabilitation centre at Satkoshia is one of the FAO/UNDP aided crocodilian projects under the technical guidance of Dr H R Bustard.
